Can an Adapted Version of the Diabetes Prevention Program (DPP) Be Delivered Effectively to Adult Medicaid Beneficiaries?

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Background

- The number of people diagnosed with diabetes has risen from 1.5 million in 1958 to 18.8 million in 2010.[1]
- In 2011, 8.0% of Montana residents aged 18 and older, had diabetes and an estimated 30% were at high-risk to have diabetes.[2,3]
- Few studies evaluated delivery of lifestyle interventions promoting weight loss targeting low-income population.

Study Objective

- To assess the feasibility to recruit Medicaid beneficiaries at high-risk for cardiovascular disease (CVD) and Type 2 diabetes into an adapted DPP lifestyle intervention, and to evaluate their weight loss outcomes compared to non-Medicaid participants.

Limitations

- Small sample size for Medicaid cohort.
- Males were underrepresented in both cohorts.
- Self-reported physical activity and self-monitoring fat intake.

Methods

Sites: The Montana DPHHS began implementing the DPP at 4 health care facilities in 2008 and had expanded to 18 sites by 2013.

Lifestyle Coaches: Trained health professionals (RN, RD, CDE, PT).

Intervention: 10-month intensive lifestyle intervention; 16 weekly core sessions followed by 6 monthly post-core sessions.

Curriculum: NIH DPP *Lifestyle Balance* curriculum. Sessions include healthy eating, physical activity, and problem solving.[4]

Participant Program Goals: Self-monitor dietary intake and physical activity, decrease fat gram intake, increase moderately intense physical activity to ≥150 min/week, and achieve 7% weight loss.

Recruitment Strategies and Reimbursement: Referring providers, community groups, and employers; paid and earned media, brochures, and word-of-mouth. In 2012, Montana Medicaid included DPP as a covered benefit.

Participant Eligibility Criteria: Aged 18 years and older, BMI ≥25.0 kg/m^2, plus one or more of the following risk factors for CVD and Type 2 diabetes:

- Diagnosis of prediabetes, IGT, OR IFG
- A1C between 5.7% and 6.4%
- Blood pressure ≥130/85 mmHg or treatment
- Dyslipidemia: triglycerides ≥150 mg/d, LDL cholesterol >130mg/dl or treatment, HDL cholesterol <40mg/dl for men or <50mg/dl for women
- History of gestational diabetes mellitus or gave birth to a baby >9 lbs.

Data Source: Montana Diabetes Prevention Program, Fall 2012-Spring/Summer, 2013.

Inclusion Criteria: Participants who attended at least one session from 13 DPP sites.

Analysis: Multivariable logistic regression models to assess the odds ratios of 5% weight loss and 7% weight loss goal. Independent t-tests for continuous data and chi-square tests for categorical data were used to compare the baseline characteristics between the two groups. Intention-to-treat analyses were performed using the last observed weight of participants enrolled in the program to calculate mean weight loss.

Results

- Enrolled in Fall 2012 through Summer 2013.
- 983 adults were enrolled in a group-based lifestyle intervention.
- 12% (n=118) were Medicaid beneficiaries [Table].
- The non-Medicaid group was more likely to attend more core sessions and to self-monitor fat intake compared to the Medicaid group [Table].
- The Medicaid group was on average 9.4 years younger and had a higher rate of male participants compared to the non-Medicaid group [Table].
- The Medicaid group had a significantly higher baseline body mass index (BMI) compared to the non-Medicaid group [Table].
- The average weight loss was 3.0 and 5.4 kg in the Medicaid and non-Medicaid group, respectively [Table].
- Non-Medicaid participants were more likely to achieve the 7% weight loss goal (32%) compared to Medicaid participants (17%) [Figure 1].
- 59% of Medicaid participants achieved the 150 minutes of weekly physical activity compared to 47% of Non-Medicaid participants [Figure 1]
- Two factors were independently associated with achieving 7% weight loss goal [Figure 2]:
  - ⇒ Medicaid participants were 2.1 times less likely to be successful in achieving the goal.
  - ⇒ Participants aged 65 years or older were 1.8 times more likely to achieve the goal.

Table. Characteristics, program attendance, self-monitoring, and weight loss among Medicaid and non-Medicaid participants, Montana CVD and Diabetes Prevention Program, 2012-2013

Variable	Medicaid (n=118)	Non-Medicaid (n=865)
	Mean (SD)	Mean (SD)
Age (years)	46.7 (12.9)	56.1 (11.7)*
Baseline BMI (kg/m^2)	40.2 (9.7)*	36.0 (7.3)
Number of core sessions attended	11.2 (4.8)	12.2 (4.7)*
4 months weight change (kg)	3.0 (6.1)	5.4 (6.7)*
	% n	% n
Sex (female)	74 (87)	80 (691)
Self-monitoring fat intake ≥14 weeks	47 (55)	59 (512)*
Achieved 5% weight loss	26 (31)	44 (377)*

*P-value ≤ 0.05

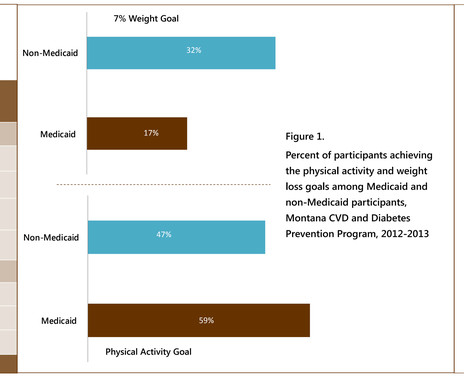
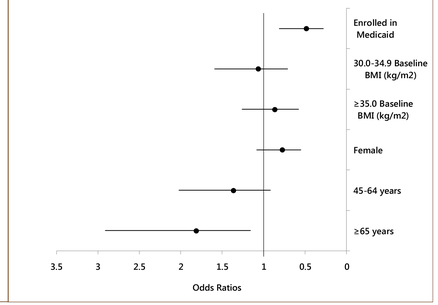


Figure 1.
Percent of participants achieving the physical activity and weight loss goals among Medicaid and non-Medicaid participants, Montana CVD and Diabetes Prevention Program, 2012-2013

Figure 2. Factors independently associated with achieving the 7% weight loss goal among participants in the Montana CVD and Diabetes Prevention Program, 2012-2013



Public Health Implications

- The implementation of a structured evidence-based lifestyle behavior change program such as DPP is a highly effective method of reducing the risk of Type 2 diabetes and CVD.
- The DPP lifestyle intervention for persons on Medicaid provide substantial health benefit and likely also financial return on investment for Medicaid.

Conclusion

- It is feasible to recruit and retain adult Medicaid beneficiaries into an adapted DPP.
- Medicaid participants achieve significant but somewhat lower weight loss compared to non-Medicaid participants.

References

1. National Diabetes Education Program, 2011.
2. Behavioral Risk Factor Surveillance System, 2011.
3. National Institutes of Health. Strategic plan for NIH obesity research. A report of the NIH Obesity Research Task Force, 2011.
4. DPP Research Group. *Diabetes Care* 2002;25:2165-71.

Montana Cardiovascular Disease & Diabetes Prevention Program
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